



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/791,136

03/02/2004

Jacky Seiller

S1022.81126US00

3182

23628 7590 04/15/2009
WOLF GREENFIELD & SACKS, P.C.
600 ATLANTIC AVENUE
BOSTON, MA 02210-2206

EXAMINER

MITCHELL, JAMES M

ART UNIT

PAPER NUMBER

2813

MAIL DATE

DELIVERY MODE

04/15/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/791,136	Applicant(s) SEILLER ET AL.	
	Examiner JAMES M. MITCHELL	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to applicant's amendment filed October 27, 2008.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang et al. (U.S. 4,576,900)

5. Chiang discloses (e.g. Fig. 4, 5, 23) discloses:

(cl. 1) An integrated circuit comprising one or several metallization levels, metal conductive strips and metal contact pads being formed on a last metallization level, the last level (580) being covered with a passivation layer (590; e.g.

Art Unit: 2813

protects during wirebonding) in which are formed openings above the contact pads (e.g. top of 581), wherein an entire_thickness (e.g. horizontal thickness) of the metal contact pads, at least at a level of their portions not covered by the passivation layer, is smaller than the (e.g. horizontally) thickness of said conductive strips (e.g. top conductive material, same cross hatch, not labeled on right side contact column...similar to 131A,1311B shown in Fig. 4, 5);

(cl. 4) the last metallization level is formed on an insulating layer (CLAIM 3 of Chiang), each contact pad being formed of a conductive layer covering an insulating portion laid on the insulating layer.

6. With respect to the intended use limitation of claim 3 that a conductive strip forms a supply network, the prior art forms the same structure as claimed and is thus capable of performing the intended use. As such, the intended use does not patentability distinguish the claimed invention. See e.g. Ex parte Masham, 2 USPQ2d 1647 (1987) (the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations).

7. With respect to the product by process limitation of claim 4 that each contact pad is "formed of a conductive layer... laid on the insulating layer," the claim is unpatenetable since the prior art (e.g. pads) forms the same structure as claimed. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-

Art Unit: 2813

process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

8. With respect to the selected dimensions applicant has not disclosed that the selected dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. As such the selected dimensions would have been obvious to one of ordinary skill in the art, since it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang et al. (U.S. 4,576,900) as applied to claim 1 and further in combination with Tong et al (U.S. 6,743,707).

10. Chiang further discloses use of aluminum material for some of its conductors, but it does not explicitly disclose that its pad may be made formed from aluminum.

11. However, Tong teaches aluminum as a conductive material for pads (Col. 3, Lines 13-14).

Art Unit: 2813

12. Because aluminum is a known material for the use in pads as exemplified in Tong above, it would have been obvious to one of ordinary skill in the art to form the pad of Sahara with aluminum, since it has been held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination. Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945). See M.P.E.P 2144.07

13. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahara et al. (U.S. 2002/0063340).

14. Sahara (Fig. 1, 4C) discloses:

(cl. 1) an integrated circuit comprising one or several metallization levels, metal conductive strips (23, 25) and metal contact pads (22) being formed on a last metallization level, the last level being covered with a passivation layer (17) in which are formed openings (17A; Fig. 4B) above the contact pads; a portion of its pad with a smaller thickness than strips, at least at a level of their portions not covered by the passivation layer) is smaller than the thickness of said conductive strips (e.g.

depression in pad portion, 22 not covered; Fig. 4C)

(cl. 2) at least one conductive strip forms a coil (25; Fig.1);

(cl. 4) the last metallization level is formed on an insulating layer (14; Par. 0082).

15. Sahara does not disclose its entire thickness of the metal contact pads smaller than the strip.

Art Unit: 2813

16. However applicant has not disclosed that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical¹. As such, the selected dimension of the pad would have been obvious to one of ordinary skill in the art, since it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

17. With respect to the intended use limitation of claim 3 that a conductive strip forms a supply network, the prior art forms the same structure as claimed and is thus capable of performing the intended use. As such, the intended use does not patentability distinguish the claimed invention. See e.g. *Ex parte Masham*, 2 USPQ2d 1647 (1987) (the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations).

18. With respect to the product by process limitation of claim 4 that each contact pad is “formed of a conductive layer... laid on the insulating layer,” the claim is unpatenetable since the prior art (e.g. pads) forms the same structure as claimed. “[E]ven though product-by-process claims are limited by and defined by the process,

¹ Applicant's Figure 5 shows an embodiment where the entire pad is not smaller than the strips.

Art Unit: 2813

determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

19. With respect to the selected dimensions applicant has not disclosed that the selected dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. As such the selected dimensions would have been obvious to one of ordinary skill in the art, since it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

20. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sahara al. (U.S. 2002/0063340) as applied to claim 1 and further in combination with Tong et al (U.S. 6,743,707).

21. Sahara discloses further that its pad may be formed of copper and like material (Par. 0087), but does not explicitly disclose that its pads are made from aluminum.

Art Unit: 2813

22. However, Tong teaches copper and aluminum as like/equivalent conductive materials for pads Col. 3, Lines 13-14).

23. It would have been obvious to one of ordinary skill in the art to form the pad of Sahara with aluminum as taught by Tong in order to provide a like material.

24. Moreover, the use of aluminum for bonding is known in the art at the time the invention was invented as evidenced by Tong. As such, the selected material would have been obvious to one of ordinary skill one art, since it has been held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination. Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945). See M.P.E.P 2144.07

25. Claims 1, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. 6,358,831) in combination with Huang et al (U.S. 6,815,324).

26. Liu (Fig. 1-2A) discloses
(cl. 1) depositing a metal layer (25) on a substrate (22); etching the metal layer (Fig. 1-2A) to form metal portions and said conductive strips (conductive paths, not labeled; Fig. 2A); covering the substrate, the conductive strips, and the metal portions with a passivation layer (29); forming openings (24) in the passivation layer above the metal portions and therefore removing portion of the protection layer.

27. Liu does not disclose partially etching the metal portions to decrease their thickness to obtain said contact pads.

Art Unit: 2813

28. However, Huang (Fig. 6-7) teaches partially etching the metal portions to decrease their thickness to obtain said contact pads.

29. It would have been obvious to one of ordinary skill in the art to incorporate a partial etching step to a metal portion of Liu in order to remove the depression in metal regions that lead to poor contacts as taught by Huang (Col. 5, Lines 11-16).

30. With respect to preamble that its method is for forming IC of claim 1, it is not limiting, because it does not impart a manipulative difference in the method. See M.P.E.P 2111.013.

31. With respect to the selected dimensions applicant has not disclosed that the selected dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. As such the selected dimensions would have been obvious to one of ordinary skill in the art, since it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).
2 [R-3].

Response to Arguments

Art Unit: 2813

32. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES M. MITCHELL whose telephone number is (571)272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew Landau can be reached on (571) 272-1731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

April 13, 2009
/James M. Mitchell/
Examiner, Art Unit 2813